



# Overview Briefing



# Why a MOUT ACTD?

## DSB 1994 Military Operations in Built-up Areas (MOBA) Summer Study

*“...the most complex and resource intensive battlefield in the 21st Century...”*

*“...the most likely battlefield in the 21st Century...”*

Bosnia, 1996



### *It's The Environment!*

- *Noncombatants*
- *Electro-Magnetic Interference*
- *Densely Compacted Areas*
- *High Rise Buildings*
- *Modern Construction*
- *Manpower intensive*

*Potential adversaries have military parity with US forces*



# *Mission*

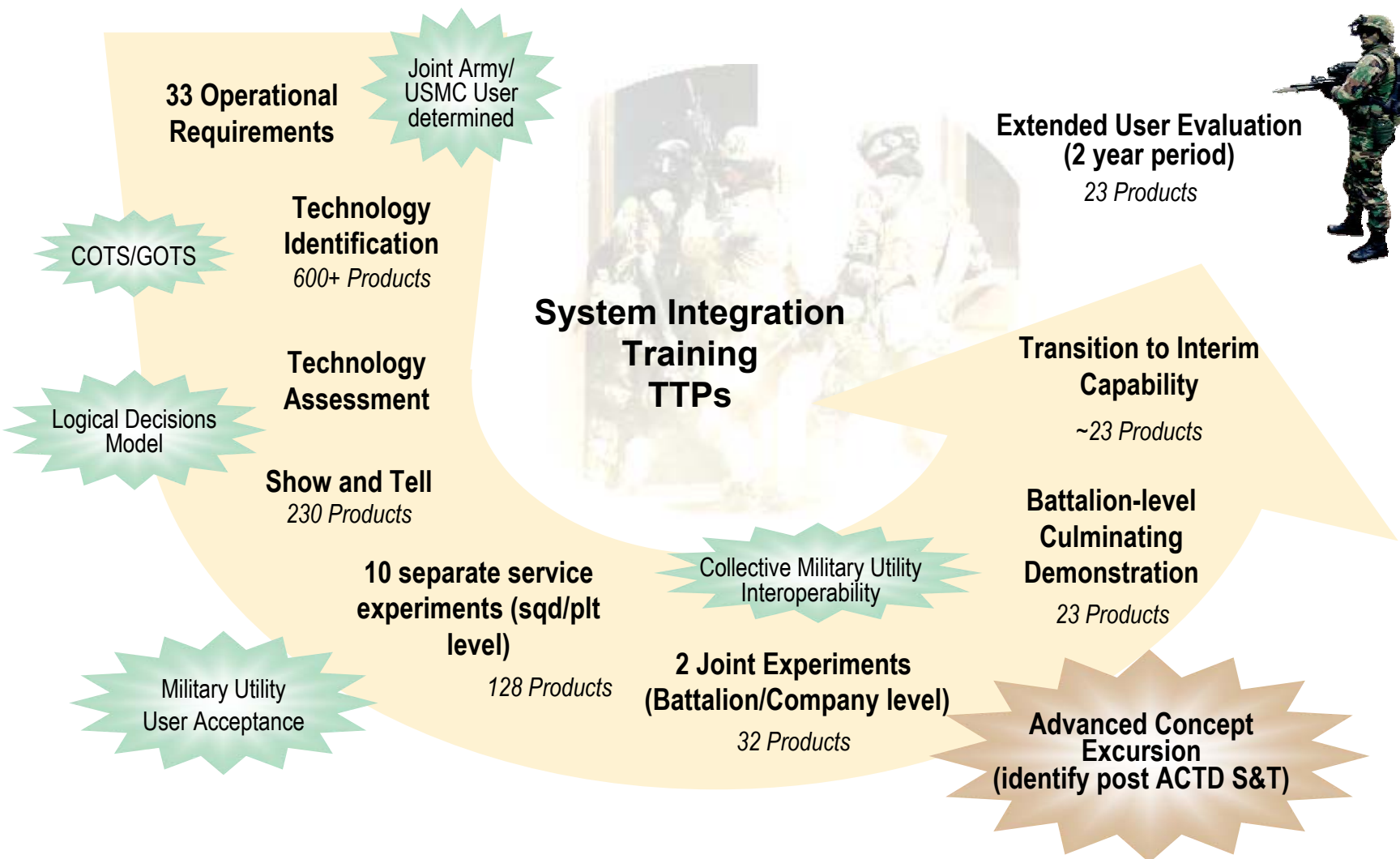
## Improve the operational capabilities of soldiers and Marines in MOUT

- Evaluate advanced technologies to provide technological dominance in MOUT, including TTPs to employ new capabilities
- Provide interim capabilities to operational units along with tactics, techniques and procedures (TTPs)
- Set the stage for rapid acquisition of downselected technologies





# Snapshot





# ***Requirements Identification***

- **Defense Science Board determined Military Operations in Built-up Areas was being overlooked**
- **Series of workshops held in Fort Benning, GA with staff NCOs and company grade officers with experience in urban combat in Grenada, Panama, Desert Shield/Storm, Haiti, Balkans, and Somalia**
- **Management team, Technology Program Office (TPO) and Dismounted Battlespace Battle Lab (DBBL) created functional area work groups**
  - **C4I**
  - **Force Protection**
  - **Engagement**
  - **Mobility**



# 33 Requirements

## C4I

- R01: Identification of Friendly, Enemy, and Non-Combatants
- R02: Powered Optics
- R03: Hands-Free Non-Line-of-Sight Communication*
- R04: Produce and Update Maps*
- R05: Intelligence Collection and Dissemination*
- R06: Night Vision/Light Source
- R07: Through Wall Sensor*
- R33: Sniper Detection
- R36: Hand Held Target Designation
- R41: Position/Location in Buildings*

## Force Protection

- R09: Level IV Body Armor
- R10: Man-Portable Shield
- R11: Clearly Mark All Friendlies
- R12: Joint Protection
- R13: Lightweight Mask
- R14: Personal Protection Kit
- R15: Hearing Protection
- R26: Improved Obscurant
- R35: Flexible Cuffs
- R42: Casualty Evacuation

## Mobility

- R28: Get on Top of Buildings

## Engagement

- R08: Remote Marking
- R16: Detect/Disarm Booby Traps*
- R21: Hands-Free Sling
- R24: Soft Round
- R25: Non-Lethal Tools/Munitions
- R27: Blow Man-Sized Hole in Concrete*
- R29: Precision Mortar
- R30: Non-Explosive Breach
- R31: Non-Lethal Blunt Trauma Training Round
- R34: Non-Lethal Grenade
- R37: Point Munition

## Modeling and Simulation

- R40: Mission Planning/Virtual Rehearsal Tools

*Solutions satisfying these requirements were considered high priority, high return by soldiers and Marines*





# ***Extended User Evaluation (EUE)***

- **All 22 products that went to the JCF-AWE for the Culminating Demonstration were accepted for use in the two year EUE**
- **Current activities include**
  - Implementing the disposition plan
  - Completing documentation of the ACTD, with particular emphasis on the EUE
  - Collection and processing of sustainment data
  - Collection and processing of user feedback data from troops



# Residual Products

| Req | Product                                    | Army | Marines | SOCOM |
|-----|--|------|---------|-------|
| R02 | Thermal Weapon Sight                       | X    | X       |       |
|     | Close Combat Optics                        | X    |         |       |
|     | Machine Gun Optics                         | X    |         |       |
|     | ACOG TA31                                  |      | X       |       |
|     | Reflex RX01-10                             |      | X       |       |
|     | Aquila 4X                                  |      | X       |       |
|     | Sn-5 Optic                                 |      | X       |       |
| R04 | Battlespace Mapper                         | X    |         |       |
| R05 | Pointer UAV                                | X    |         | X     |
| R09 | SPEAR Vest, Ranger Variant                 | X    | X       |       |
| R13 | M45 Mask                                   | X    | X       |       |
| R12 | Bijan Knee/Elbow Pads                      | X    | X       |       |
| R21 | Tactical Taylor Sling                      | X    | X       |       |
| R27 | Simon 150 Door Breaching Round             | X    |         |       |
|     | Explosive Cutting Tape                     | X    |         |       |
| R28 | Rafael LIMOR Ladder                        | X    | X       |       |
|     | Quikstep (Portal)                          | X    | X       |       |
| R30 | DEMTEK Breaching Kit                       | X    | X       |       |
| R31 | Simunitions                                | X    | X       |       |
| R35 | Tuff Cuff Restraints                       | X    | X       |       |
| R40 | Sextant Virtual Warfighting Tool           | X    |         |       |
|     |  |      |         |       |
| R06 | * VECTOP                                   |      |         | X     |
| R41 | * Tracking, Monitoring and Location System |      |         | X     |

*\* Products were identified post-experiment and evaluated via limited objective experimentation*





# Residual Products



QuickStep Ladder



Pointer UAV



Knee/elbow pads

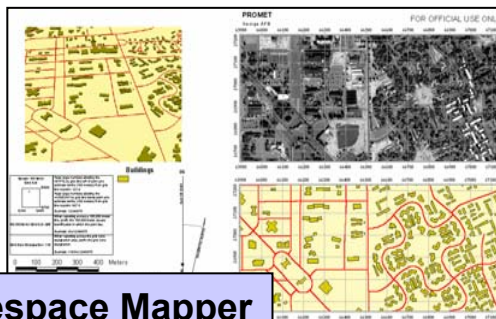
Explosive Cutting Tape



Tuff Cuff restraints



SPEAR Body Armor  
Ranger Variant



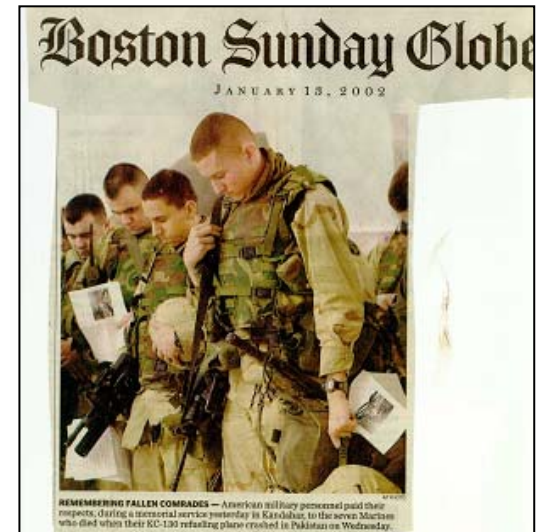
Battlespace Mapper

The use of a trade name or the name of a manufacturer or a contractor in this presentation does not constitute an official endorsement or approval of the use of such commercial hardware or software or of service. This presentation may not be cited for the purpose of advertisement



# *Operation Enduring Freedom*

- Facilitating the purchase of multiple UAV systems for SOCOM
- 26<sup>th</sup> MEU – 3/6: MOUT ACTD Kit used in Afghanistan during Operation Enduring Freedom; kit was also used at Camp Rhino, Kandahar and The U.S. Embassy in Kabul





# Transition – Products

| Product                          | Status  |
|----------------------------------|---|
| Simon 150 Door Breaching Round   | Transitioned to PM-Small Arms (as a Warfighter Rapid Acquisition Program)<br>Product type classified as Rifle Launched Entry Munition (RLEM), February 2002   |
| Pointer UAV                      | Placed on GSA schedule<br>Working with PEO Aviation to have Pointer considered as an interim capability to MAV and Small UAV<br>Facilitating purchase of multiple systems by SOCOM to support Enduring Freedom<br>USAF has employed MOUT loaned systems for airfield protection and security with great success |
| Bijan Knee/Elbow Pads            | Soldier Enhancement Program completed   |
| Explosive Cutting Tape           | Soldier Enhancement Program approved FY02   |
| Simunitions                      | Soldier Enhancement Program approved FY02   |
| Quikstep (Portal)                | Soldier Enhancement Program approved FY02   |
| M45 Mask                         | Currently fielded to aviation SOF only; request for change to BOI to include dismounted infantry is at TSM  |
| SPEAR Vest, Ranger Variant       | Joint Army/USMC Body Armor ORD modified to reflect this armor   |
| DEMTEK Breaching Kit             | Placed on GSA schedule  |
| Tuff Cuff Restraints             | Placed on GSA schedule  |
| Tactical Taylor Sling            | No transition success; 10 <sup>th</sup> Mtn Div has used discretionary funds to purchase  |
| Optics (multiple)                | Some are currently fielded, others are not likely to transition   |
| Battlespace Mapper               | Actively pursuing transition avenues  |
| Sextant Virtual Warfighting Tool | Actively pursuing transition avenues  |
| Rafael LIMOR Ladder              | Product is expensive and not likely to transition   |



# ***Transition Experimental TTP Products***

- **Handbooks 1/2: Rifle Platoon and Squad in urban combat.**
- **Handbook 3: MOUT-specific individual and individual leader tasks for Skill Levels 1-4.**
- **Handbooks 4/5: Rifle Company in urban combat.**
- **Handbooks 6/7: Infantry Battalion in urban combat.**
- **Handbook 8: Training Support Package for MOUT ACTD Technologies.**
- **SA/Comms TTPs to 3-325 (Land Warrior EXFOR)**
- **TTP Handbooks to:**
  - 10th Mountain Division MOUT Leaders Course
  - All Division G-3s, XVIII Airborne Corps
  - TSM Soldier to C Co, 3/325, 82nd Airborne Division, Land Warrior EXFOR
  - Canada, United Kingdom, Australia and Sweden



# ***Lessons Learned***

- **Active soldier participation and consideration is key to program success**
- **Consistent EXFOR throughout the program is extremely beneficial**
- **Transition planning and implementation needs to occur early and continuously**
- **Technologically superior may not be tactically superior**
- **COTS products can be successful, but are not always militarily suitable**
- **Sufficient training time built into all events a must**
- **Incremental experimentation allows early lessons learned to be applied to subsequent experiments**
- **Focus on TTPs as an ACTD product is a key to successful employment of new technologies and transition of those capabilities**



# ***Legacies***

- **A different approach to an S&T program: *warfighter as core element***
- **TTP handbooks**
- **MOUT site instrumentation at Fort Benning and Camp Lejeune**
- **SA freeze frame methodology**
- **Technology Assessment Process (TAP)**
- **Transition planning process**
- **High fidelity M&S capability for radio technologies**
- **Training impact analyses**
- **S&T investment strategy for future MOUT capabilities**
- **Experiments provide a good MOUT training opportunity for all troops involved**